



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,115	02/06/2004	Glen C. Shepherd	Solectron 735	8375

7590 06/11/2009  
Robert Moll  
1173 St. Charles Court  
Los Altos, CA 94024

EXAMINER
----------

DINH, TUAN T

ART UNIT	PAPER NUMBER
----------	--------------

2841

MAIL DATE	DELIVERY MODE
-----------	---------------

06/11/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/774,115	<b>Applicant(s)</b> SHEPHERD ET AL.	
	<b>Examiner</b> Tuan T. Dinh	<b>Art Unit</b> 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Pre-appeal conf. Decision 03/27/09.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 30-33 and 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 14 and 34 is/are rejected.
- 7) ☒ Claim(s) 2-13, 15-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action mailed on 07/23/08 is persuasive and, therefore, the finality of that action is withdrawn.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claim 1 recites the limitation "**the first plated via**" in line 14. There is insufficient antecedent basis for this limitation in the claim.
3. Claims 1 and 14, 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, lines 11-14, it is unclear. The phrase of "wherein the solder mask exposes s part of the conductive pad that extends beyond the soldsrable terminal sides of the surface mount component to increase solder formation between the conductive pad and the soldersble terminal sides and to reduce solder formation at the first plated via" is confuse. How much of the solderable formation (solder material) could be applied between the solder mask and pad that cause to reduce the formation (solder) applied at the via.? Further, the applicant does not define the thickness of the solder mask surround the vias in such to prevent the solder applied at the via. Does applicant mean "the exposes part between the solder mask and the pad that cause to

Art Unit: 2841

achieve a solder being applied and minimize the solder applied to at the via.? Please, clarify.

Regarding claim 14, lines 13-22, it is unclear. The phrase of "... , wherein the first conductive pad Includes a portion that is exposed to solder and extends beyond the first solderable terminal sides of the surface mount component to Increase solder formation along the first solderable terminal aides and to reduce solder formation at the first plated via; and ... wherein the second conductive pad Includes a portion that Is exposed to solder and extends beyond the second solderable terminal sides of the surface mount component to Increase solder formation along the second solderable terminal sides and to reduce solder formation at the second plated via" is confuse. How can the conductive pad having a expose portion that cause to increase the solder along the terminal of the component and reduce the solder at the vias? The phrase is so confuse. Please clarify.

Regarding claim 34, lines 2-4, it is unclear. The phrase of "the first conductive pad extends beyond the terminal sides of the component **a maximum distance** that reduce..." is so confused. What does applicant means? What does applicant means of "a maximum distance" so that cause to reduce the solder to the via? Please clarify.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2841

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Prior Arts (figures 1-2, submitted applicant, hereafter APA).

As best understood to claim 1, APA discloses a PWB having a substrate (10) package footprint see figures 1-2 comprising:

A SMT component (33) having terminals each having end (37) mounted on a conductive layer (paragraph [0002, lines 3-4]) of the substrate (10), conductive pad (21, 22) having traces (26), connected to s plated vias (25), the vias (25) being surround by a solder resist/mask (24) respectively, see figure 1, the solder masks (24) covers a part of the pad (21, 22), the terminal ends (37) of the component (33) connected to the substrate (10) by solder joins (31), the solder mask (24, 34) exposes a part of the pad (21) and extended beyond the end of the SMT (10).

As best understood to claims 14 and 34, APA discloses a substrate (10) comprising a SMT component (33) having terminals each having end (37) mounted on a conductive layer (paragraph [0002, lines 3-4]) of the substrate (10), conductive pad (21, 22) having traces (26), connected to first and second plated vias (25), the first and second vias (25) being surround by first and second solder resist/mask (24) respectively, see figure 1, each of the solder masks (24) covers a part of the pad (21, 22), the terminal ends (37) of the component (33) connected to the substrate (10) by solder joins (31), the solder formed between the terminal (44) of the component (46) and the solder mask (53), the solder mask (24, 34) exposes a part of the pad (21) and extended beyond the end of the SMT (10).

***Allowable Subject Matter***

6. Claims 2-13, 15-29, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments with respect to claims 1-29 and 34 have been considered but are moot in view of the new ground(s) of rejection.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sajjia et al. and Matern disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Dinh whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reichard Dean can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tuan T Dinh/  
Primary Examiner, Art Unit 2841.